

REMARKS

The Examiner is thanked for the due consideration given the application. The specification has been amended to insert headings and to better denote the title.

Claims 1, 3, 5, 6 and 10-12 are pending in the application. Claims 2, 4, and 7-9 have been canceled by this amendment. Claims 10-12 are newly presented. Claim 1 has been amended to generally incorporate subject matter from claim 4. Claims 3, 5 and 6 have been amended to improve their language in a non-narrowing fashion. New claim 10 generally sets forth subject matter from claims 2, 4 and 5. New claims 11 and 12 generally set forth subject matter from claims 6 and 3, respectively.

No new matter is believed to be added to the application by this amendment.

The Specification

The specification has been objected to as having improper formatting and/or title heading. The specification has been amended to be in proper format.

Claim Objections

The claims have been objected to as containing informalities. The comments in the Office Action have been considered, and the claims have been appropriately amended or canceled.

Rejections Based On GENG

Claims 5 and 6 have been rejected under 35 USC §102(b) as being anticipated by GENG (U.S. Patent 6,028,672).

Claims 1-3 and 7 have been rejected under 35 USC §102(b) as being unpatentable over GENG in view of KEATING et al. (U.S. Publication 2002/0122566).

Claim 4 has been rejected under 35 USC §103(a) as being unpatentable over GENG in view of FURUKAWA (U.S. Publication 2002/0061132).

Claim 8 and 9 have been rejected under 35 USC §102(b) as being unpatentable over GENG in view of KEATING et al., and further in view of FURUKAWA.

These rejections are respectfully traversed.

The present invention pertains to determining spatial co-ordinates of an object that is illustrated, by way of example, in Figure 1 of the application, which is illustrated below.

FIG 1

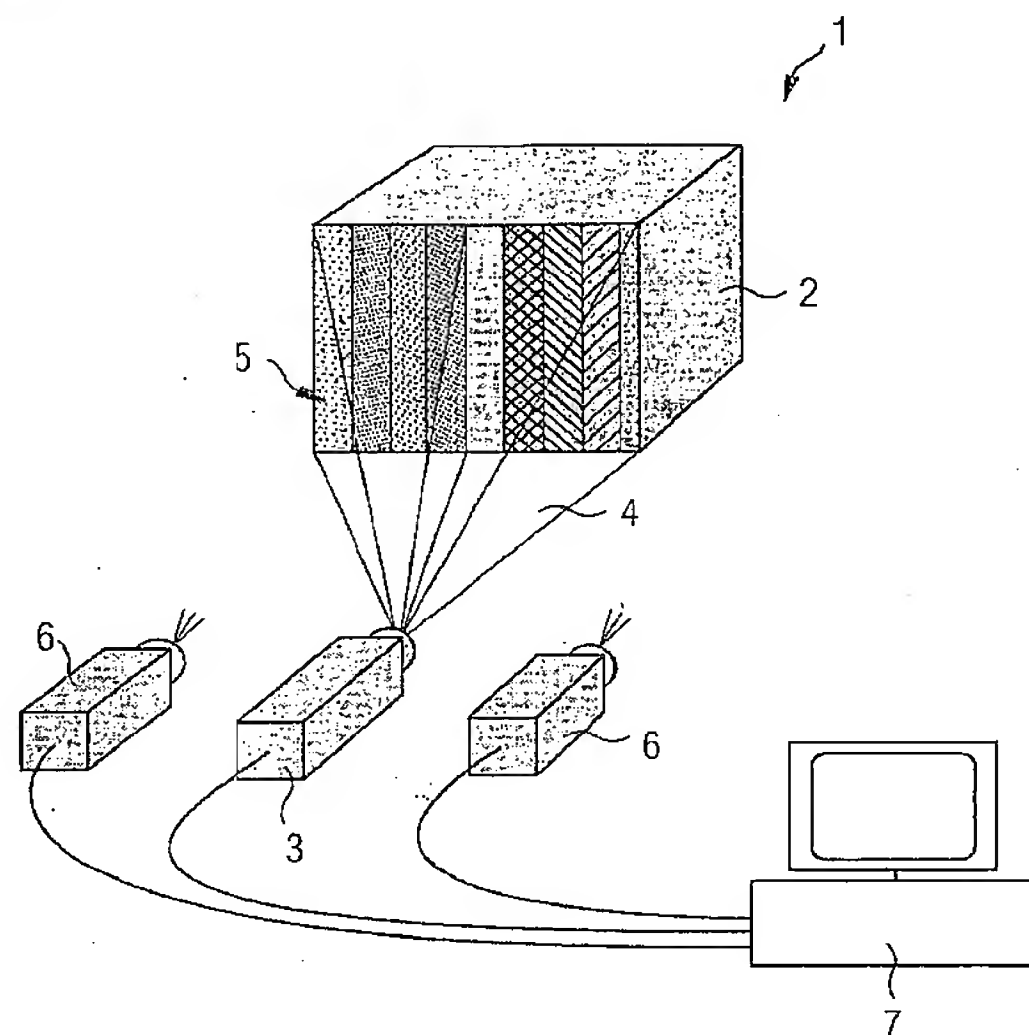
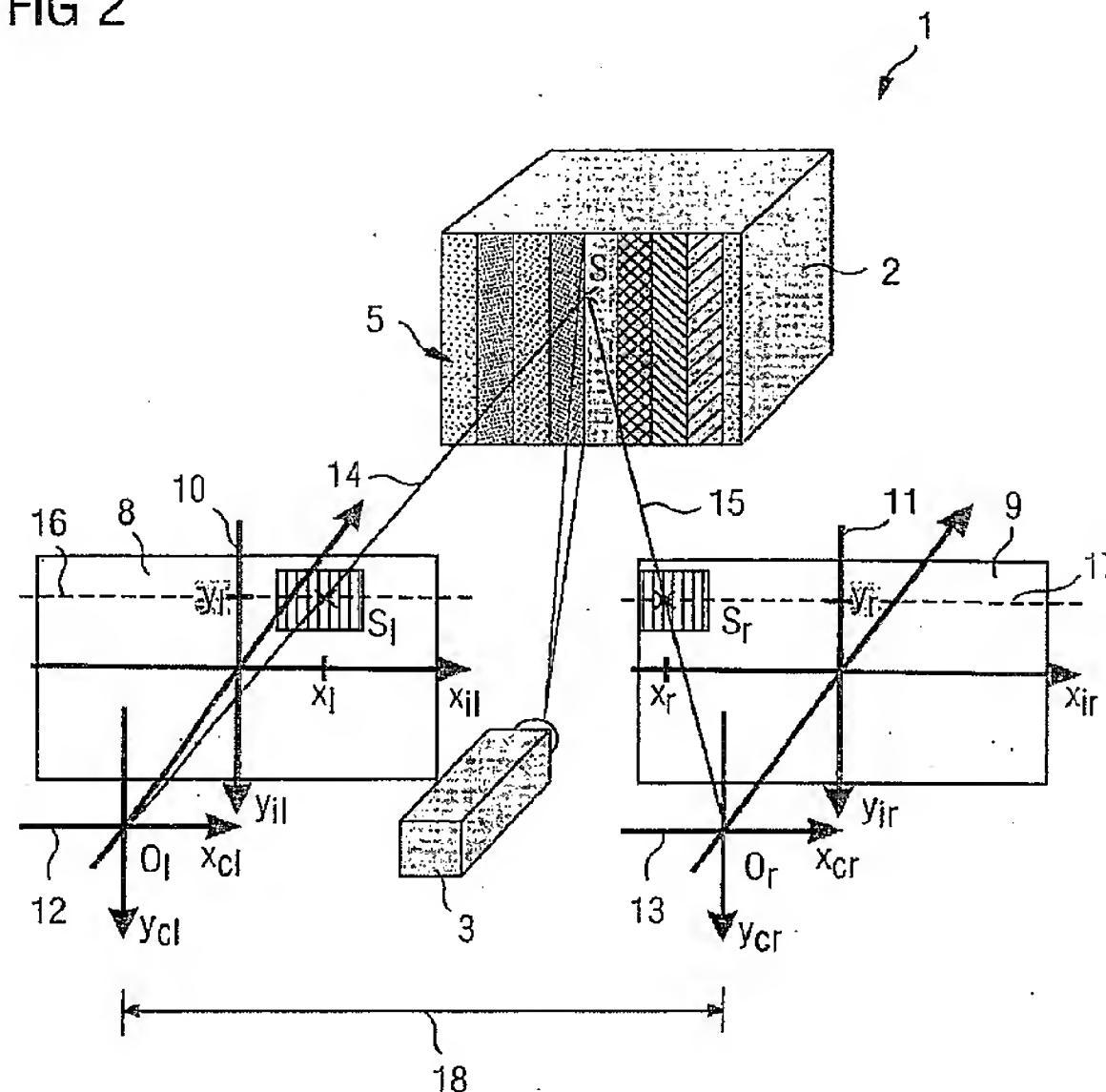


Figure 1 shows an object 2 being viewed by at least two cameras 6. The utilization of the special coordinates is exemplarily shown in Figure 2, which is reproduced below.

FIG 2



As shown, a projector (3) projects onto the object (2) a pattern (4) with known projection data. Object images (8) are created for triangulation. The pattern (4) contains redundant encoded projection data, and the data processing unit (7) restricts the search for corresponding image points (S_l , S_r) to problem areas in which an evaluation of the redundant data of the object images (8, 9) produces an erroneous result.

GENG pertains to a high speed three dimensional imaging method. The Office Action refers to Figure 1 of GENG, which is reproduced below.

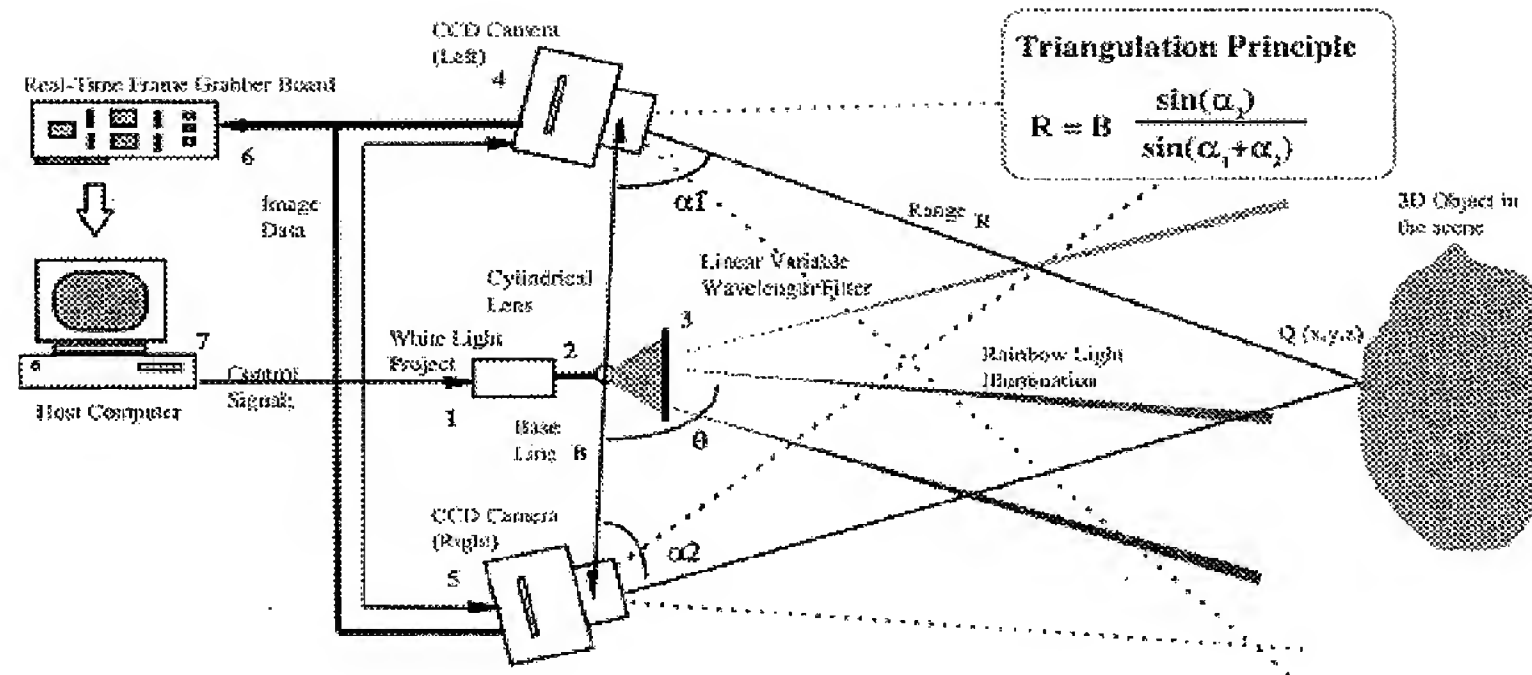


Figure 1. Operation Principle of the Rainbow Stereo 3D Camera

This technology of GENG recognizes three dimensional surfaces via "three dimensional" stereo cameras, where colored light with a spatial partitioning is projected onto the surface of an object. The three dimensional depth value is developed by a triangulation principle in both pictures, which is bound with a search for a common color characteristic. A different picture is obtained by a pixel-to-pixel color comparison.

At page 6 the Office Action asserts (in regards to claims 5 and 6) the GENG is not a two-part combination of a structure-light measurement followed by search, when necessary, of the corresponding triangulation to cover the defective area. More commonly colored features are compared and evaluated. Furthermore, GENG used a very specific so called "Rainbow Stereo 3D camera". The three dimensional depth values in GENG were

determined by a triangulation process. It is immaterial if the two recorded images contain intensity and color.

GENG thus fails to anticipate a claimed embodiment of the present invention.

In paragraph 7 at page 8 the Office Action asserts the combination of GENG with Keating et al. would obtain claims 1-3 and 7. The Office Action acknowledges that does not teach that the encoded projection data to contain redundant projection data. The utilization of redundant projection data in the projected pattern, which is projected onto an object, is imputed to the combination of GENG with KEATING et al.

However, this is incomprehensible because KEATING et al. principally concerns so called embedded data and not with the projection of light patterns or image capture.

GENG and KEATING et al. thus fail to render *prima facie* unpatentable claim 1 of the present invention. Claim 3, which depends upon claim 1, is patentable for at least the above reasons.

In paragraph 8 at page 10 the Official Action acknowledges that GENG does not teach restricting the search for corresponding image points to problem areas in which an evaluation of the pattern images only produce an erroneous result. The Office Action turns to FURUKUWA to supply these teachings to claim 4 (now incorporated into claim 1).

FURUKAWA teaches a conventional process in which specific zones are assigned to the image in order to keep the process under control. Correction of erroneous data is accomplished via a data correction means.

In contrast, the present invention changes to coordinate distribution process when redundancy is detected, that the next projected part of the picture is erroneous. This change of measurement methods is neither taught nor inferred in GENG or FURUKAWA. One of ordinary skill would thus not produce instant claim 1 of the present invention from a knowledge of GENG and FURUKAWA.

In the first two paragraphs at page 11 asserts that the teachings of FURUKAWA lead to a stereo mage processing apparatus and method that can yield a sufficiently accurate three dimensional data from satellite stereo pictures and normal antenna stereo pictures, in which the operator intervention is minimized. However, these additional teachings of FURUKAWA cannot lead to claim 1 of the present invention.

Regarding paragraph 9 of the present invention, it is noted that the instant claimed invention pertains to "object images" and not to "pattern images". Also, claims 8 and 9 have now been canceled as being repetitive.

Therefore, the applied art renders the present invention neither anticipated nor prima facie unpatentable.

These rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

Conclusion

The Examiner is thanked for considering the Information Disclosure Statements filed August 4, 2006 and November 6, 2006 and for making the references therein of record in the application.

Prior art of record but not utilized is believed to be non-pertinent to the instant claims.

The objections and rejections are believed to have been overcome, obviated or rendered moot. No issues remain. The issuance of a Notice of Allowability is accordingly respectfully solicited.

The Commissioner is hereby authorized in this, concurrent, and future submissions, to charge any deficiency or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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